United States
Department of
Agriculture

**Soil
Conservation
Service**

Spokane,
Washington

Washington Water Supply Outlook

APRIL 1, 1988

Foreword

How Forecasts Are Made

Most of the annual streamflow in the Western United States originates as snowfall. This snowfall accumulates high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are viewed in conjunction with snowpack data to prepare runoff forecasts. This report presents a comprehensive picture of water supply outlook conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data and narratives describing current conditions.

Streamflow forecasts are cooperatively generated by Soil Conservation Service and National Weather Service hydrologists. Forecasts become more accurate as more data affecting runoff becomes known. For this reason, forecasts are issued that reflect three future precipitation conditions — Below Normal, Average, and Above Normal. These forecasts are terms reasonable minimum, most probable, and reasonable maximum. Actual streamflow can be expected to fall between the lower and upper forecast values eight out of ten years.

Snowpack data are obtained by using a combination of manual and automated measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation, temperature, and other parameters are monitored on a daily basis and transmitted via radio telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

For More Information

Copies of Monthly Water Supply Outlook Reports and other reports may be obtained from the states listed below. An annual snow survey data summary is published by the Soil Conservation Service for each of the western states. Historical snow survey data may be obtained at those same offices.

STATE	ADDRESS
Alaska	201 East 9th Ave., Suite 300, Anchorage, AK 99501-3687
Arizona	201 East Indianola, Suite 200, Phoenix, AZ 85012
Colorado	2490 West 26th Ave., Denver, CO 80211
New Mexico	517 Gold Ave. S.W., Room 3301, Albuquerque, NM 87102-3157
Idaho	304 North 8th Street, Room 345, Boise, ID 83702
Montana	10 East Babcock, Room 443, Federal Building, Bozeman, MT 59715
Nevada	1201 Terminal Way, Room 219, Reno, NV 89502
Oregon	1220 Southwest 3rd Ave., Room 1640, Portland, OR 97204
Utah	4402 Federal Building, 125 South State Street, Salt Lake City, UT 84147
Washington	360 U.S. Court House, Spokane, WA 99201-1080
Wyoming	Federal Building, 100 East "B" Street, Casper, WY 82601

In addition to state reports, a Water Supply Outlook for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209.

Published by other agencies:

Water Supply Outlook Reports prepared by other agencies include: California — Snow Survey Branch, California Department of Water Resouces, P.O. Box 388, Sacramento, CA 95802; British Columbia — The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory — Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta, Environment Technical Services Division, 9820 106th St., Edmonton, Alberta T5K 2J6.

Washington
Water Supply Outlook

and

Federal — State — Private
Cooperative Snow Surveys

Issued by

Wilson Scaling
Chief
Soil Conservation Service
Washington, D.C.

Released by

Lynn A. Brown
State Conservationist
Soil Conservation Service
Spokane, Washington

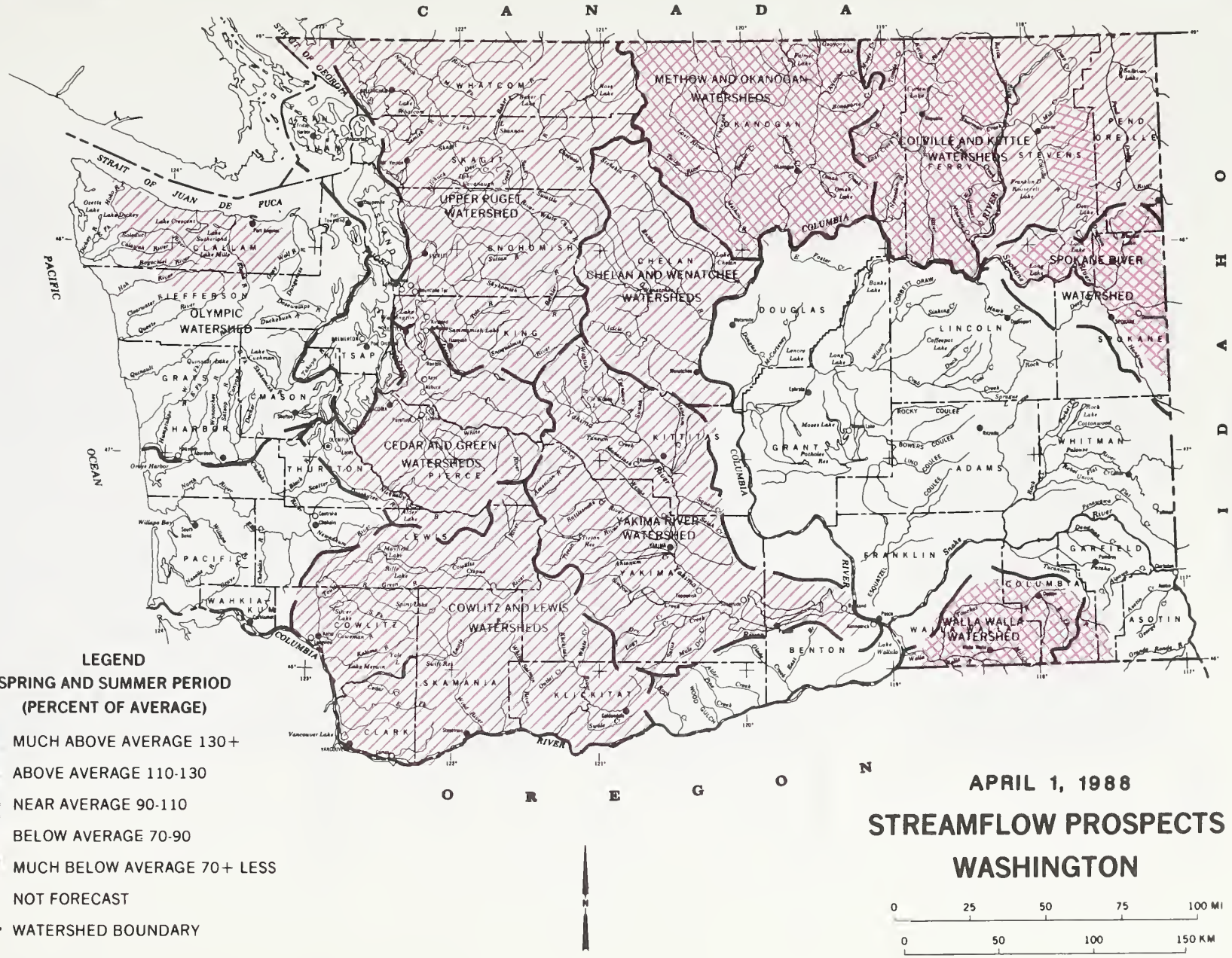
Prepared by

William F. Weller
Water Supply Specialist
Room 360 U.S. Courthouse
Spokane, Washington 99201

TABLE OF CONTENTS

U S DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE



LEGEND
SPRING AND SUMMER PERIOD
(PERCENT OF AVERAGE)

- MUCH ABOVE AVERAGE 130+
- ABOVE AVERAGE 110-130
- NEAR AVERAGE 90-110
- BELOW AVERAGE 70-90
- MUCH BELOW AVERAGE 70+ LESS
- NOT FORECAST
- WATERSHED BOUNDARY

APRIL 1, 1988

STREAMFLOW PROSPECTS
WASHINGTON

0 25 50 75 100 MI

0 50 100 150 KM

SOURCE: Data compiled by SCS Field Personnel.

JANUARY 1986 4-R-39641

BASE 4-R-39260

1

GENERAL OUTLOOK

SUMMARY:

The snowpack, except in the Olympic basins, is below to much below normal. March precipitation was above normal except in the Colville basin. Reservoir storage remains below normal at the major irrigation projects throughout the state, with the reservoirs in the Yakima 45%, much below normal. March streamflow remained low on the east side of the state but near average on the west side. Temperatures were near the season normals for the month. Runoff for 1988 is forecasted to be below to much below normal in Washington.

SNOWPACK:

Snowfall during late March at the higher elevations in Washington helped improve the mountain snow pack. Snow pack in most areas of Washington remains below normal and varies as follows: the Spokane Basin 71% up from 66% last month, Colville - Pend Oreille River 75% up from 70%, the Wenatchee 92% up from 84%, Chelan Basin 101% up from 92%, and the Yakima Basin 81%, up from 72% last month. On the western slopes of the Cascades the Lewis and Cowlitz basins are at 83%, the Skagit 85%, and Green 75% of normal. The Olympic area has 106% for the best average around the state. Maximum snow pack is at Paradise Park snow course in the Cowlitz Basin, with 62.7 inches of water content.

PRECIPITATION:

March precipitation values from National Weather Service data for Washington showed all basins with above normal precipitation except the Colville area. Western Washington varied from 136% in the south to 168% in the Green River area. Mud Mountain Dam reported 9.42 inches for 203% of average. In Eastern Washington the Pend Oreille Basin had 91% of normal, the Spokane with 151%, Yakima at 136% and the Okanogan Basin with 123%. April 1 precipitation values from SNOTEL sites indicate a water year value near 79% of average for the high mountain areas of Washington. Water year to date precipitation is below average over most of the state. Values vary from 72% of normal in the Colville Basin to 83% in the Okanogan basin.

RESERVOIRS:

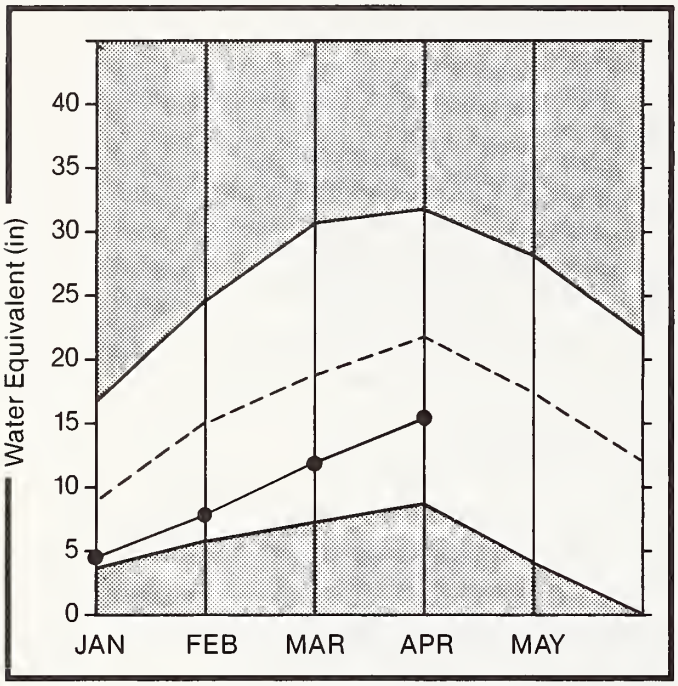
Streamflow continued to be below normal in Eastern Washington keeping the reservoirs from filling. April 1 reservoir storage are: Coeur d'Alene Lake 102,200, 46% of capacity, Chelan Lake 194,200 acre feet, 83% of average and up from 91,300 acre feet last month, Ross Lake 466,000 acre feet, down from 612,000 acre feet, Roosevelt Lake 1,715,000 acre feet 108% of normal. Storage continues below average in the Yakima Basin with 328,900 acre feet, 45% of average and up from 216,200 acre feet, 31% of average last month. Storage at other major reservoir remains varied in Washington. The Okanogan reservoirs are 89% of April 1 average.

STREAMFLOW:

March streamflows continued below normal over most of Washington. Streamflow varied from 39% on the Okanogan River to a maximum of 125% for the Skykomish River. On the west side of the Cascade Mountains, runoff from the Chehalis was 75% and 112% on the Skagit River. The eastern slope of the Cascades runoff on the Yakima was 68% and the Spokane at 67% of average. In Eastern Washington streamflow was 51% of normal on the Pend Oreille and 44% on the Kettle River. Statewide forecasts for summer streamflow increased about 5% from last month. April 1 forecasts vary from 53% in the Walla Walla River to 86% for the Green River up from 70% last month.

SPOKANE

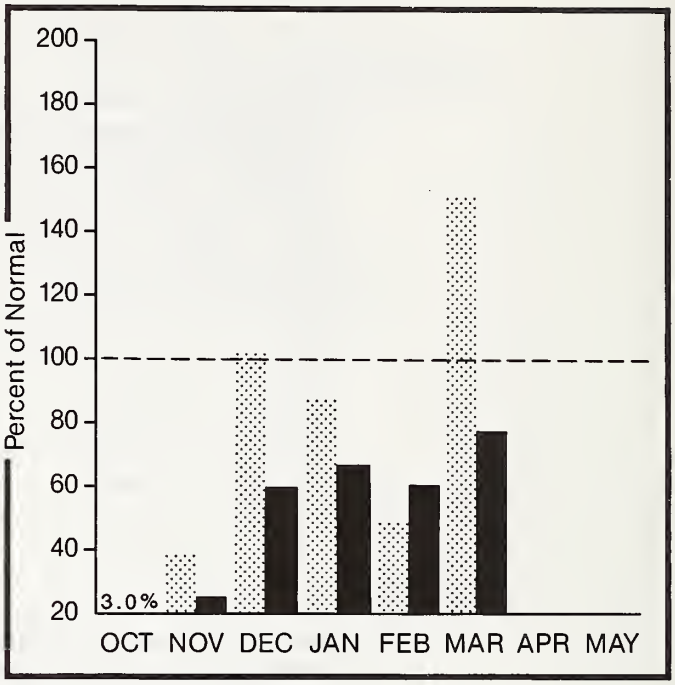
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

SPOKANE RIVER BASIN

WATER SUPPLY OUTLOOK:

April 1 storage in Coeur d' Alene Lake was 194,200 acre feet compared to 186,200 last year; average storage in Cd'A for April 1 is 234,300 acre feet. March streamflow on the Spokane River was 67% of average at Spokane. Forecast of runoff for the Spokane River Basin is 64% of normal. This forecast is based upon a snow pack that is 71% of average and a water year to date precipitation value 77% of normal. Precipitation for March was 151% of normal. Maximum snow water occurred at the Lost Lake snow course, elevation 6110 feet with 54.6 inches of water content.

For more information contact your local Soil Conservation Service office.

SPOKANE RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
SPOKANE at Post Falls	APR-SEP	2820.0	1800.0	64	2590.0	92	1010.0	36
	APR-JUL	2723.0	1740.0	64	2500.0	92	980.0	36
SPOKANE at Long Lake	APR-JUL	3045.0	1920.0	63	2775.0	91	1065.0	35

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.
COEUR D'ALENE	222.8	194.2	186.2	234.3

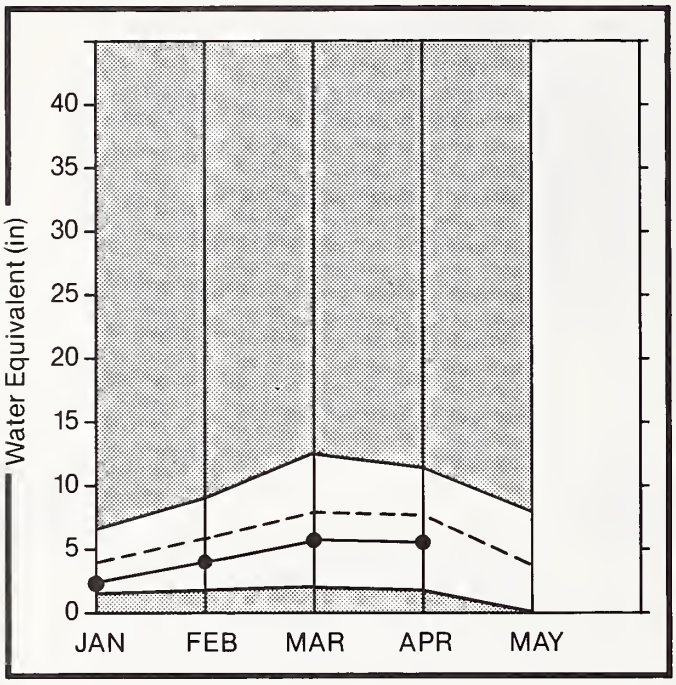
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	AVERAGE
Spokane River	22	105	71

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

COLVILLE AND PEND OREILLE

Mountain snowpack* (inches)



*Based on selected stations

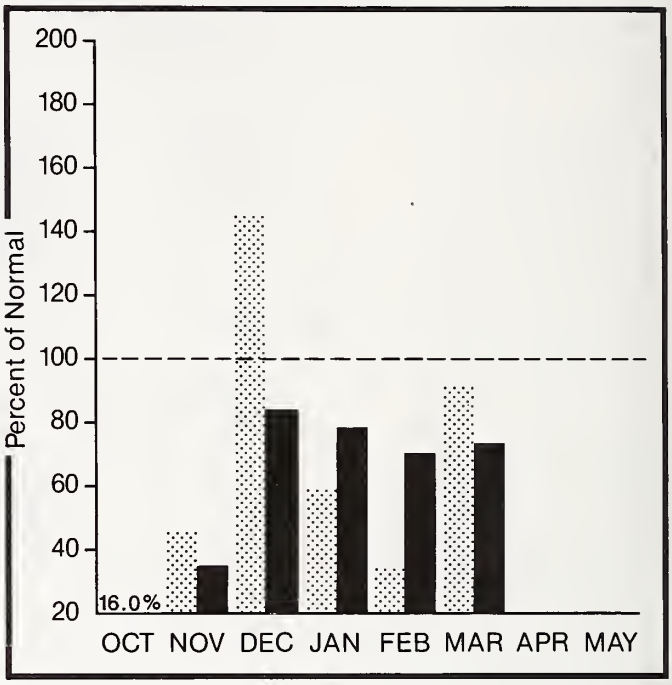
Maximum

Minimum

Average

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

COLVILLE - PEND OREILLE RIVER BASINS

WATER SUPPLY OUTLOOK:

Forecasts for the Pend Oreille River are for flows to be 71% of normal for the summer. Other forecasts are 70%, for the Kettle River and 65% on the Colville River for the summer runoff period. Streamflows for March were 51% of average on the Pend Oreille River, 44% on the Kettle River and 68% on the Columbia River at the International Border. Temperatures on the upper Columbia were 4 degrees above normal for March. Precipitation during March was 91% of average, bringing the water year to date to 72% of normal. Snow cover basin-wide is 75% of average, up from 70% last month. Snow pack measurement for Bunchgrass Meadows was 74 in with 23.5 inches of water.

For more information contact your local Soil Conservation Service office.

COLVILLE - PEND OREILLE RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
PEND OREILLE RIVER bl Box Canyon 2	APR-SEP	15170.0	10800.0	71	13380.0	88	8220.0	54
	APR-JUL	13900.0	9900.0	71	12265.0	88	7535.0	54
	APR-JUN	11960.0	8730.0	73	10765.0	90	6695.0	56
CHAMOKANE CREEK	MAY-AUG	9.2	5.8	63	9.0	98	2.0	22
COLVILLE RIVER at Kettle Falls	APR-SEP	139.0	90.0	65	144.0	104	36.0	26
	APR-JUL	128.0	83.0	65	133.0	104	33.0	26
	APR-JUN	118.0	79.0	67	125.0	106	33.0	28
KETTLE RIVER nr Laurier	APR-SEP	1907.0	1330.0	70	1865.0	98	795.0	42
	APR-JUL	1807.0	1265.0	70	1770.0	98	760.0	42
	APR-JUN	1622.0	1170.0	72	1625.0	100	715.0	44
COLUMBIA RIVER at Birchbank 2	APR-SEP	44390.0	36600.0	82	41925.0	94	31275.0	70
	APR-JUL	35440.0	29200.0	82	33455.0	94	24945.0	70
	APR-JUN	25650.0	21290.0	83	24370.0	95	18210.0	71
COLUMBIA RIVER at Grand Coulee 2	APR-SEP	66460.0	51700.0	78	60340.0	91	43060.0	65
	APR-JUL	55730.0	49000.0	88	56245.0	101	41755.0	75
	APR-JUN	43420.0	34736.0	80	40380.0	93	29090.0	67

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.
ROOSEVELT	5232.0	1715.5	4535.2	1586.0
BANKS	715.0	650.7	648.0	583.0

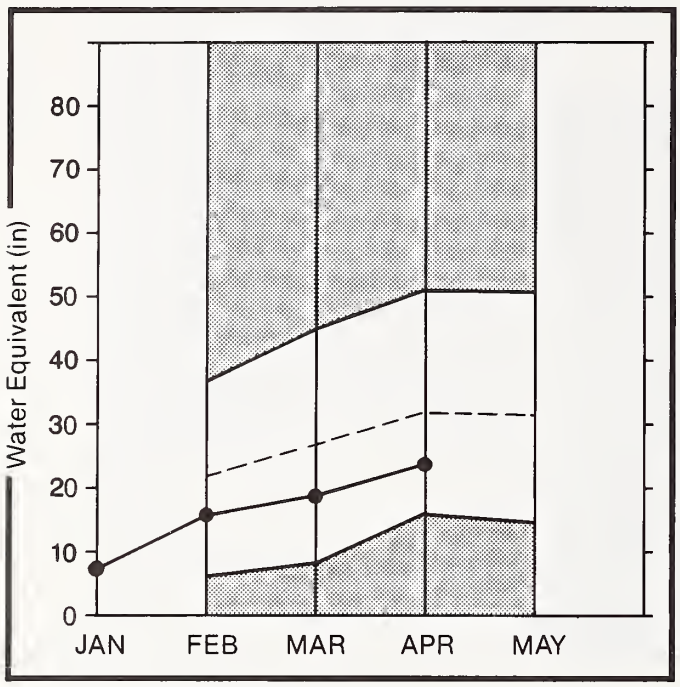
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	THIS YEAR AS % OF AVERAGE
Colville River	3	100	72
Pend Oreille River	12	100	77
Kettle River	10	115	72

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

OKANOGAN AND METHOW

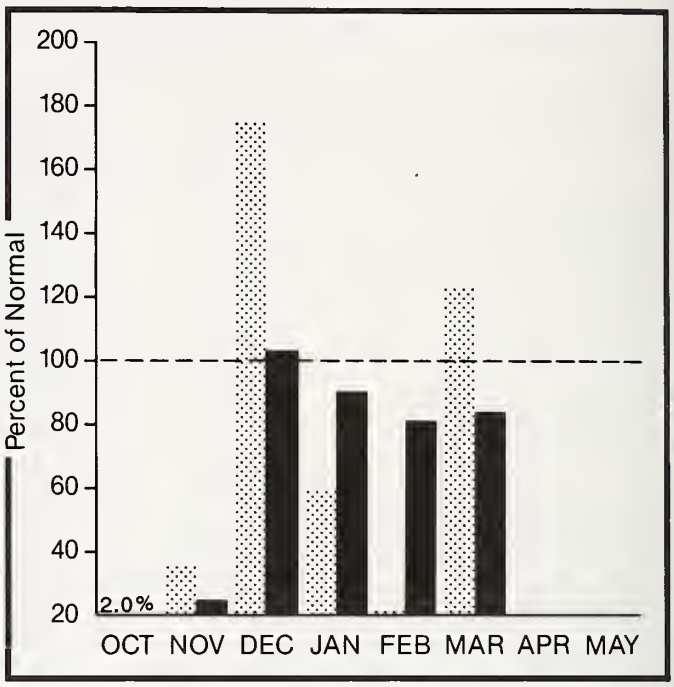
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

OKANOGAN - METHOW RIVER BASINS

WATER SUPPLY OUTLOOK:

March precipitation in the Okanogan was at 123% with water year to date 83% of average. Snow cover as of April 1 is 76% of average on the Okanogan and 63% in the Methow Basin. Maximum snow water occurred at Harts Pass SNOTEL, elevation 6500 feet, with 33.3 inches of water in 106 inches of snow. Summer runoff forecasted for the Okanogan River and the Similkameen River is 58% of normal. For the Methow River is 61% of normal. Okanogan River streamflow was at 39% of average for March. Storage in the Conconully Reservoirs is at 13,400 acre feet which is 57% of capacity and 89% of April 1 normal. Temperatures were 5 degrees above normal in Omak for March.

For more information contact your local Soil Conservation Service office.

OKANOGAN - METHOW RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
SIMILKAMEEN R. nr Nighthawk	APR-SEP	1432.0	825.0	58	1185.0	83	465.0	32
	APR-JUL	1333.0	770.0	58	1105.0	83	435.0	33
	APR-JUN	1128.0	675.0	60	955.0	85	395.0	35
OKANOGAN R. nr Tonasket	APR-SEP	1661.0	960.0	58	1525.0	92	395.0	24
	APR-JUL	1501.0	865.0	58	1375.0	92	355.0	24
	APR-JUN	1255.0	755.0	60	1180.0	94	330.0	26
METHOW RIVER nr Pateros	APR-SEP	980.0	600.0	61	855.0	87	345.0	35
	APR-JUL	907.0	555.0	61	790.0	87	320.0	35
	APR-JUN	769.0	485.0	63	685.0	89	285.0	37

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.
CONCONULLY LAKE (SALMON)	10.5	7.4	7.8	8.0
CONCONULLY RESERVOIR	13.0	6.0	7.1	7.0

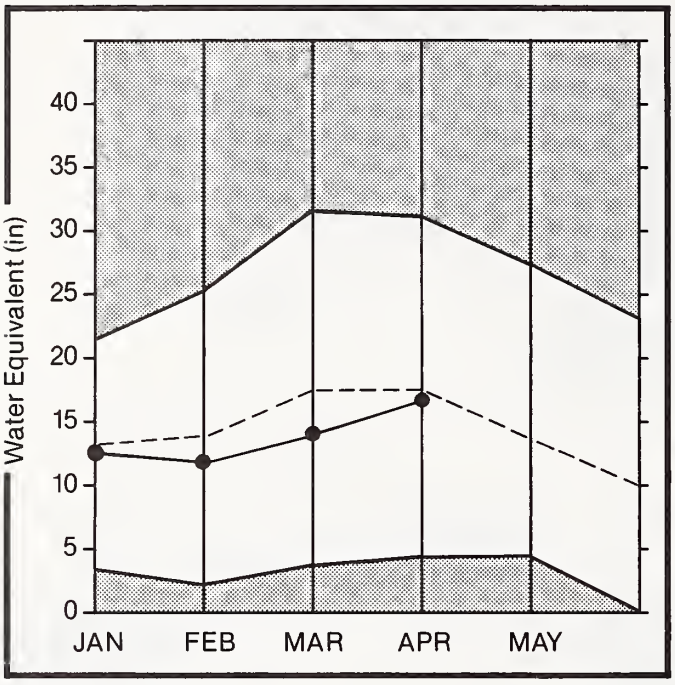
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	AVERAGE
Okanogan River	27	102	77
Methow River	4	80	63

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

WENATCHEE AND CHELAN

Mountain snowpack* (inches)



*Based on selected stations

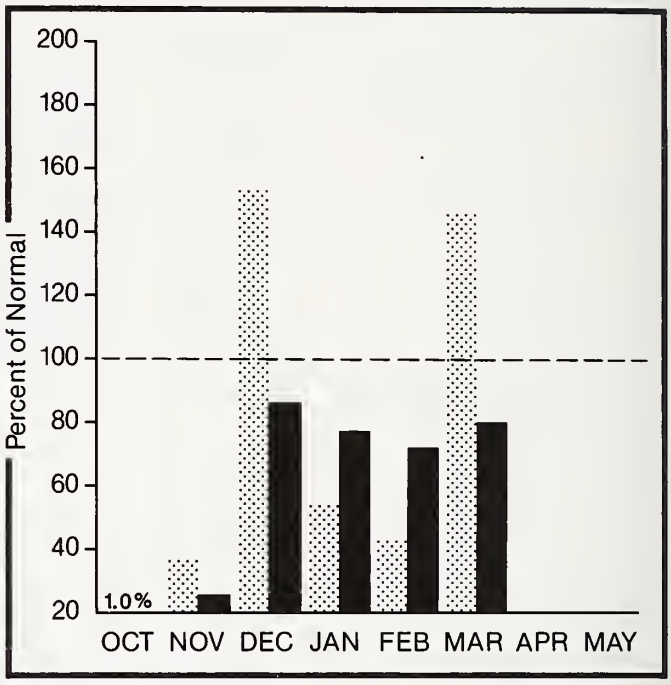
Maximum

Minimum

Average

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

WENATCHEE - CHELAN RIVER BASINS

WATER SUPPLY OUTLOOK:

Precipitation during March was 145% of normal in the basin bringing the water year to date to 78%. Reservoir storage in Lake Chelan is at 106,200 acre feet or 50% of April 1 average and 16% of capacity. Runoff for the Wenatchee River is forecast to be 83% of normal for the summer. Forecasts in the Chelan and Stehekin River runoff are for 81% and 83% of average. March streamflow within the basin was 75% of normal on the Wenatchee and 69% on the Chelan River. Snow pack in the Wenatchee is 92% of normal and in the Chelan Basin is 101% of normal. Lyman Lake SNOTEL had the most snow water with 60.7 inches on April 1 with a snow depth of 147 inches. Data from the Trough SNOTEL will not be available for the rest of the season as the shelter blew over during the recent wind storm.

For more information contact your local Soil Conservation Service office.

WENATCHEE - CHELAN RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
CHELAN RIVER at Chelan 1	APR-SEP	1184.0	955.0	81	1170.0	99	740.0	63
	APR-JUL	1040.0	845.0	81	1030.0	99	660.0	63
	APR-JUN	815.0	675.0	83	820.0	101	530.0	65
STEHEKIN R. at Stehekin	APR-SEP	844.0	700.0	83	795.0	94	605.0	72
	APR-JUL	714.0	590.0	83	670.0	94	515.0	72
	APR-JUN	541.0	460.0	85	520.0	96	400.0	74
ENTIAT RIVER nr Ardenvoir	APR-SEP	233.0	200.0	86	240.0	103	160.0	69
	APR-JUL	221.0	190.0	86	230.0	104	150.0	68
	APR-JUN	171.0	150.0	88	180.0	105	120.0	70
WENATCHEE RIVER at Plain	APR-SEP	1270.0	1055.0	83	1450.0	114	660.0	52
	APR-JUL	1113.0	925.0	83	1270.0	114	580.0	52
	APR-JUN	899.0	765.0	85	1045.0	116	485.0	54
STEMILT nr Wenatchee (miners in)	MAY-SEP	138.0	85.0	62	130.0	94	40.0	29
ICICLE CREEK nr Leavenworth	APR-SEP	370.0	295.0	80	415.0	112	175.0	47
	APR-JUL	340.0	270.0	79	380.0	112	160.0	47
	APR-JUN	270.0	219.0	81	305.0	113	135.0	50
COLUMBIA R. bl Rock Island Dam 2	APR-SEP	72250.0	56100.0	78	65500.0	91	46600.0	64
	APR-JUL	61050.0	47600.0	78	55535.0	91	39665.0	65
	APR-JUN	47730.0	37230.0	78	43435.0	91	31025.0	65

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.
CHELAN LAKE	676.1	106.2	125.2	212.1

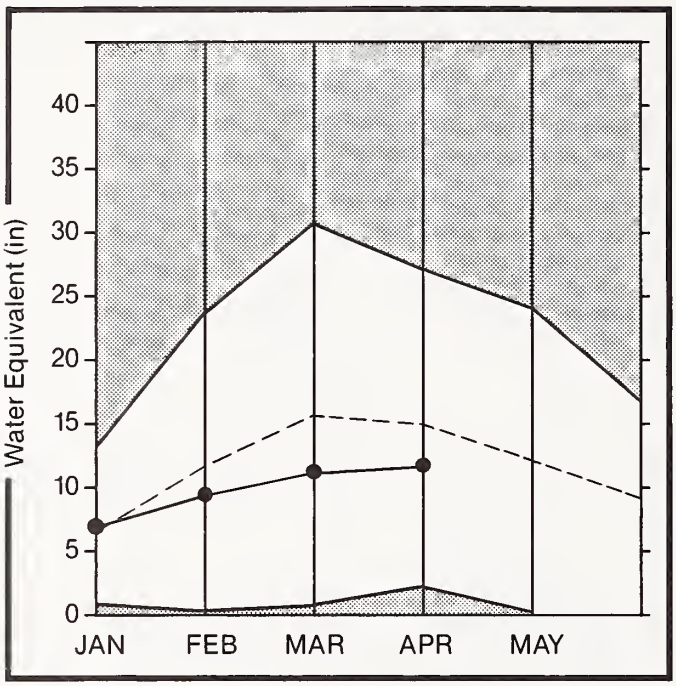
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	AVERAGE
Chelan Lake Basin	6	113	101
Entiat River	1	116	99
Wenatchee River	7	106	92
Colockum Creek	0	0	0
Squilchuck Creek	1	24	13
Stemilt Creek	2	69	33

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

YAKIMA

Mountain snowpack* (inches)



*Based on selected stations

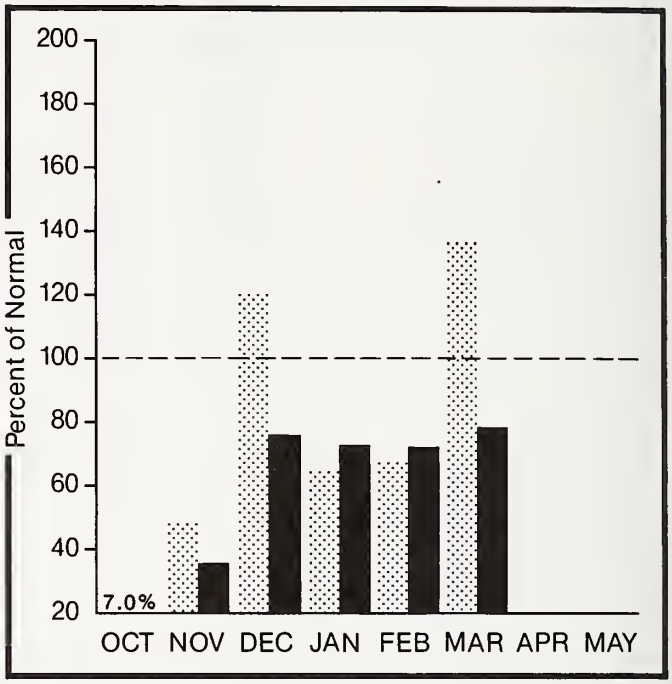
Maximum

Minimum

Average

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

YAKIMA RIVER BASIN

WATER SUPPLY OUTLOOK:

March precipitation was 136% of normal and 78% for the water year to date. February streamflow for the Yakima Basin was 68% of normal. April 1 reservoir storage for the five major reservoirs was 329,200 acre feet up from 216,200 acre feet last month. Reservoir storage remains the lowest since 1933. Snow pack is 81% of average in the Yakima Basin based upon 20 snow course and SNOTEL readings. Forecasts for the Yakima Basin runoff vary throughout the basin as follows: the Yakima River at Cle Elum 76%, Naches River 78%, the Yakima River at Parker 72% and Ahtanum Creek 81%.

For more information contact your local Soil Conservation Service office.

YAKIMA RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
YAKIMA RIVER at Martin 1	APR-SEP	136.0	105.0	77	120.0	88	91.0	67
	APR-JUL	126.0	97.0	77	110.0	87	84.0	67
	APR-JUN	112.0	88.0	79	99.0	88	77.0	69
YAKIMA RIVER at Cle Elum 2	APR-SEP	951.0	720.0	76	815.0	86	625.0	66
	APR-JUL	846.0	640.0	76	725.0	86	555.0	66
	APR-JUN	735.0	575.0	78	650.0	88	500.0	68
YAKIMA RIVER nr Parker 2	APR-SEP	2075.0	1500.0	72	1895.0	91	1105.0	53
	APR-JUL	1862.0	1360.0	73	1715.0	92	1005.0	54
	APR-JUN	1643.0	1216.0	74	1530.0	93	905.0	55
KACHESS RIVER nr Easton 1	APR-SEP	133.0	96.0	72	111.0	83	81.0	61
	APR-JUL	114.0	82.0	72	95.0	83	70.0	61
	APR-JUN	102.0	75.0	74	86.0	84	64.0	63
CLE ELUM RIVER nr Roslyn 1	APR-SEP	459.0	360.0	78	410.0	89	310.0	68
	APR-JUL	417.0	325.0	78	370.0	89	280.0	67
	APR-JUN	353.0	280.0	79	319.0	90	240.0	68
BUMPING RIVER nr Nile 1	APR-SEP	139.0	120.0	86	148.0	106	92.0	66
	APR-JUL	128.0	110.0	86	136.0	106	84.0	66
	APR-JUN	106.0	93.0	88	114.0	108	72.0	68
AMERICAN RIVER nr Nile	APR-SEP	121.0	98.0	81	110.0	91	85.0	70
	APR-JUL	112.0	91.0	81	100.0	89	80.0	71
	APR-JUN	94.0	77.0	82	85.0	90	70.0	74
TIETON RIVER at Tieton 1	APR-SEP	244.0	175.0	72	230.0	94	121.0	50
	APR-JUL	208.0	150.0	72	195.0	94	105.0	50
	APR-JUN	168.0	123.0	73	160.0	95	85.0	51
NACHES RIVER nr Naches 2	APR-SEP	860.0	670.0	78	840.0	98	500.0	58
	APR-JUL	779.0	608.0	78	765.0	98	450.0	58
	APR-JUN	667.0	535.0	80	670.0	100	400.0	60
AHTANUM CREEK nr Tampico 2	APR-SEP	47.0	38.0	81	55.0	117	20.0	43
	APR-JUL	43.0	35.0	81	50.0	116	20.0	47
	APR-JUN	37.0	30.0	81	45.0	122	15.0	41

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.
KEECHELUS	157.8	64.8	93.7	110.0
KACHESS	239.0	71.1	90.6	187.0
CLE ELUM	436.9	93.3	162.8	290.0
BUMPING LAKE	33.7	17.7	25.0	11.0
RIMROCK	198.0	82.0	152.7	142.0

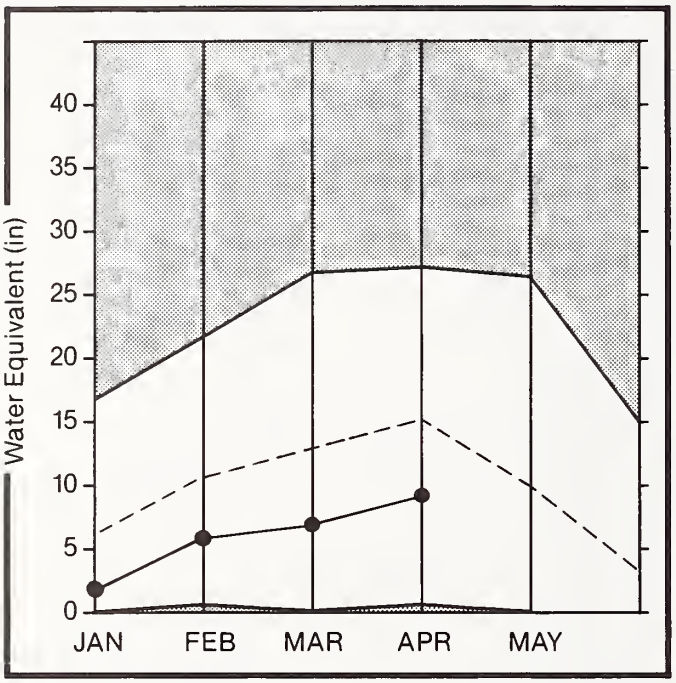
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	THIS YEAR AS % OF AVERAGE
Yakima River	14	103	79
Ahtanum Creek	2	98	89

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

WALLA WALLA

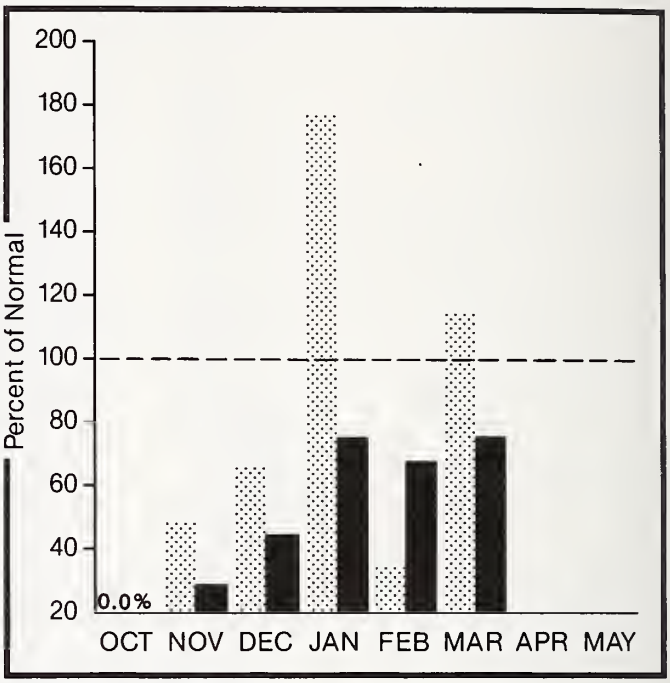
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

WALLA WALLA RIVER BASIN

WATER SUPPLY OUTLOOK:

April 1 snow pack in the Walla Walla River Basin is 62% of normal. Water content at the Touchet SNOTEL site was 32.1 inches on April 1. Streamflow forecasts are for 53% of average in the Walla Walla Basin for the coming summer. Streamflow for the Snake River was at 52% of normal for March and 49% on the Walla Walla River. March precipitation was 113% of average, with 1.9 inches falling at the Walla Walla weather station. The water year to date precipitation has been 74% of normal.

For more information contact your local Soil Conservation Service office.

WALLA WALLA RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
MILL CREEK at Walla Walla	APR-SEP	17.5	9.6	55	13.0	74	6.0	34
	APR-JUL	17.3	9.5	55	13.0	75	6.0	35
	APR-JUN	17.2	9.5	55	13.0	76	6.0	35
SF WALLA WALLA nr MiltonFreewater	APR-JUL	55.0	29.0	53	38.0	69	20.0	36
COUSE CK nr Milton Freewater	APR-JUL	3.6	1.7	47	3.0	83	1.0	28
PINE CREEK nr Weston	APR-JUL	2.7	1.1	44	2.0	74	1.0	37
COLUMBIA R. at The Dalles 2	APR-SEP	101800.0	72200.0	71	85435.0	84	58965.0	58
	APR-JUL	87110.0	62200.0	71	73525.0	84	50875.0	58
	APR-JUN	70470.0	50035.0	71	59195.0	84	40875.0	58

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.

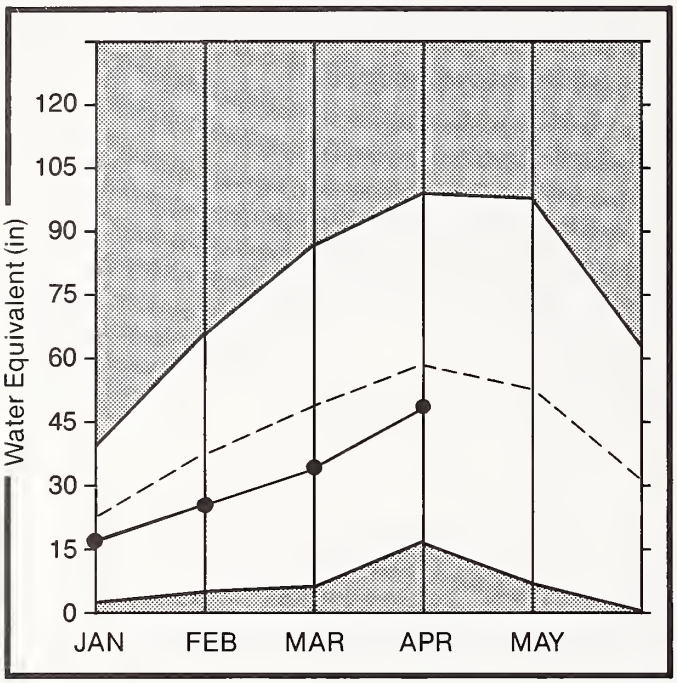
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	AVERAGE
Mill Creek	1	94	62

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

COWLITZ AND LEWIS

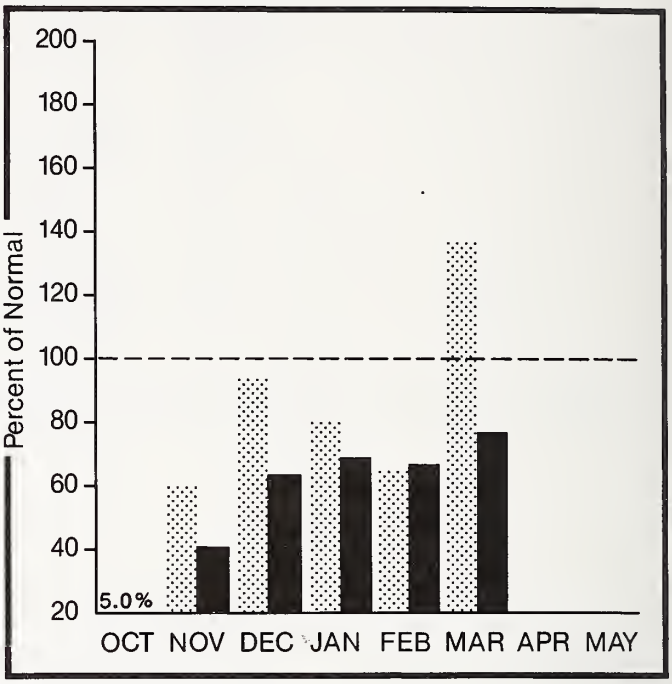
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

COWLITZ - LEWIS RIVER BASINS

WATER SUPPLY OUTLOOK:

Summer runoff forecasts for the Lewis River are 82% and for the Cowlitz River 79%. April 1 snow cover for the Cowlitz Basin was 72% of normal and on the Lewis Basin 94%. The Paradise Park site had the maximum water content for the basin with a snow pack containing 64.0 inches of water and 135 inches of snow on April 1. March precipitation was 136% of normal bringing the water year to date precipitation to 76% of average. Temperatures in the basin were one degree above normal for March.

For more information contact your local Soil Conservation Service office.

COWLITZ - LEWIS RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
LEWIS RIVER at Ariel 2	APR-SEP	1244.0	1020.0	82	1355.0	109	685.0	55
	APR-JUL	1084.0	889.0	82	1180.0	109	595.0	55
	APR-JUN	958.0	795.0	83	1055.0	110	535.0	56
COWLITZ R. bl Mayfield Dam 2	APR-SEP	2036.0	1570.0	77	2365.0	116	775.0	38
	APR-JUL	1782.0	1370.0	77	2065.0	116	675.0	38
	APR-JUN	1524.0	1189.0	78	1785.0	117	595.0	39
COWLITZ R. at Castle Rock 2	APR-SEP	2687.0	2110.0	79	3075.0	114	1145.0	43
	APR-JUL	2343.0	1840.0	79	2685.0	115	995.0	42
	APR-JUN	2015.0	1612.0	80	2335.0	116	885.0	44

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.

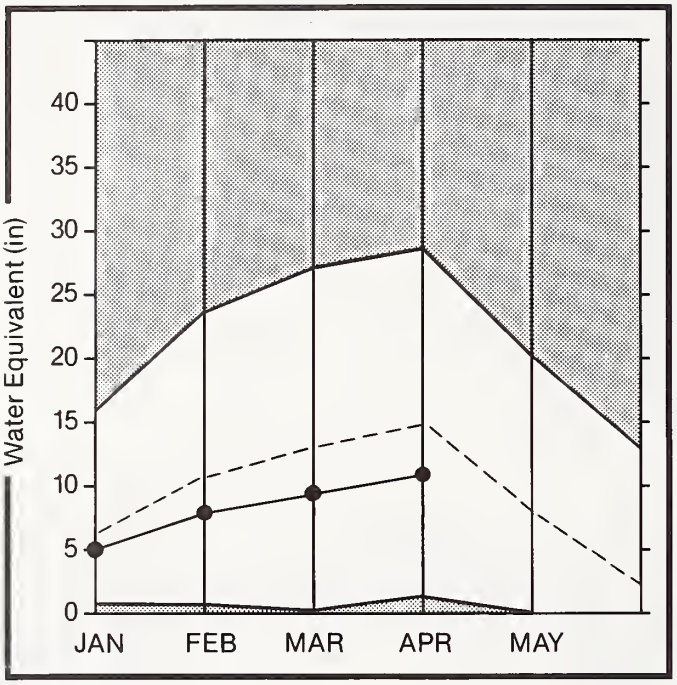
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	AVERAGE
Cowlitz River	2	95	72
Lewis River	3	89	94

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

WHITE - GREEN

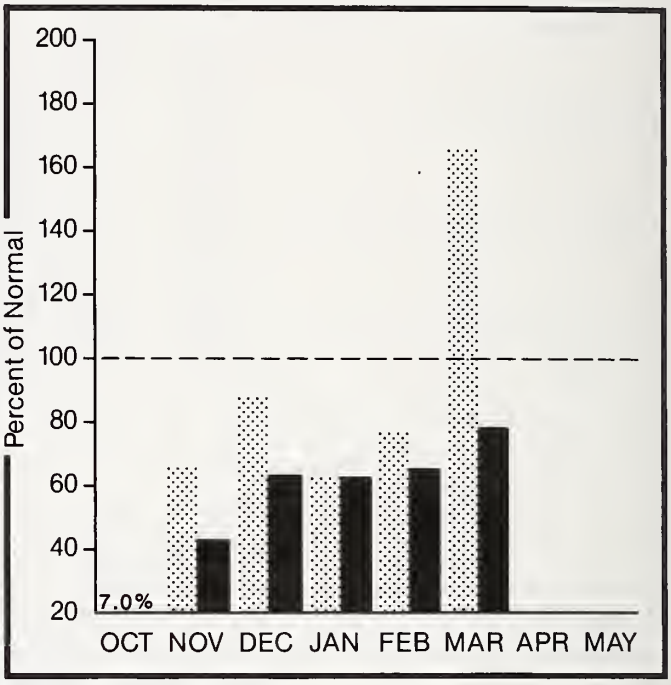
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

WHITE - GREEN RIVER BASINS

WATER SUPPLY OUTLOOK:

Summer runoff is forecasted to be 86% of normal on the Green and 83% on the Cedar Rivers. April 1 snow pack is 78% of normal for the basin, based upon measurements at 5 snow courses and SNOTEL sites.. Snow water content at the Cayuse Pass snow course was 58.8 inches in a snow depth of 153 inches on April 1. March precipitation was 168% of normal, bringing the water year to date to 77% of average. Mud Mountain Dam received 9.42 inches of precipitation during March, 203% of normal. Temperatures averaged two degrees above average for March.

For more information contact your local Soil Conservation Service office.

WHITE - GREEN RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
GREEN RIVER bl Howard Hanson Dam 2	APR-SEP	291.0	250.0	86	310.0	107	190.0	65
	APR-JUL	261.0	225.0	86	275.0	105	175.0	67
	APR-JUN	236.0	205.0	87	250.0	106	160.0	68
CEDAR RIVER nr Cedar Falls	APR-SEP	93.0	77.0	83	95.0	102	60.0	65

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.

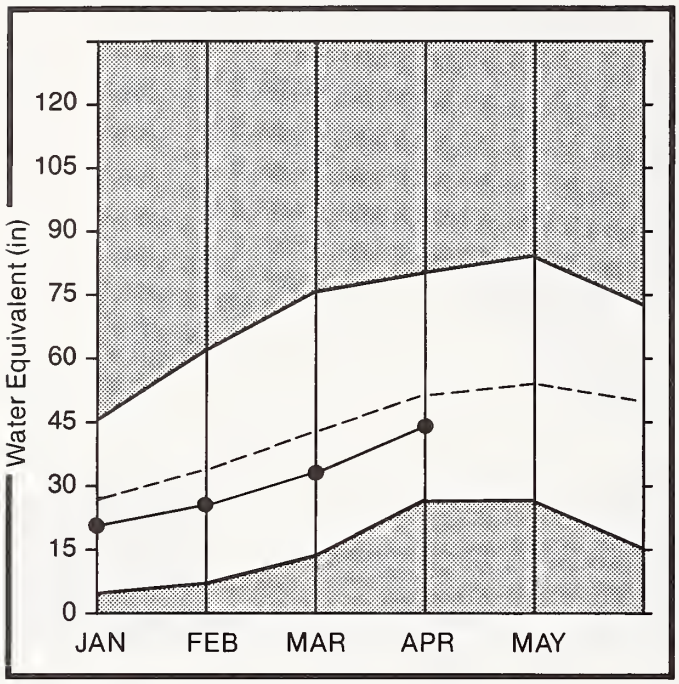
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	AVERAGE
White River	2	96	78
Green River	1	136	75
Cedar River	1	109	71

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

NORTH PUGET SOUND

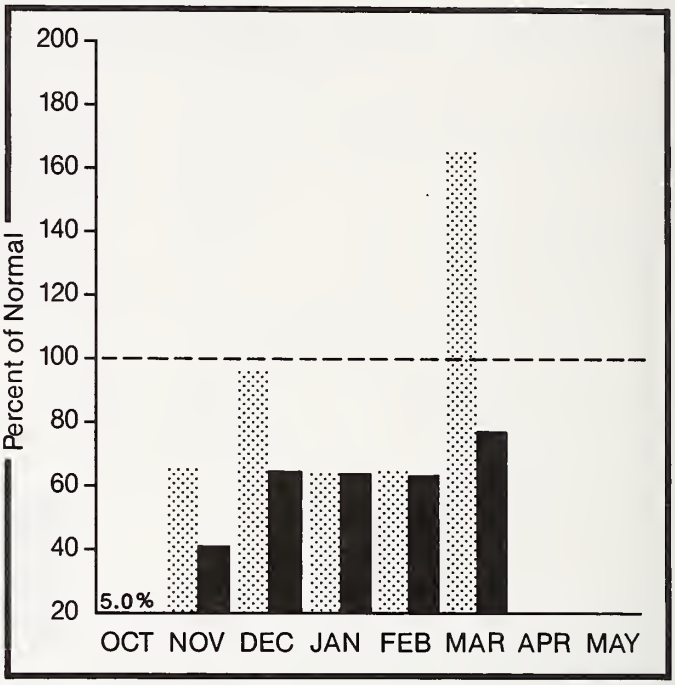
Mountain snowpack* (inches)



*Based on selected stations

Maximum
Minimum
Average
Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation
Year to date precipitation

NORTH PUGET SOUND RIVER BASINS

WATER SUPPLY OUTLOOK:

Streamflow on the Skagit River during March was 112% of average. Runoff for the Skagit River is forecasted to be 77% of normal. Reservoir storage at Ross Lake is 466,000 acre feet as of April 1; 156% of average and 33% of capacity. Precipitation values for March were 165% of average with a water year to date at 77% of normal. Diablo Dam reported 12.54 inches of precipitation for March 181% of average. Snow cover in the North Puget Basin is 86% of normal for April 1 - up from 76% last month with Brown Top snow course at 6000 feet in elevation having 53.4 inches of water content in a snow pack of 148 inches.

For more information contact your local Soil Conservation Service office.

NORTH PUGET SOUND RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
SKAGIT RIVER at Newhalem 2	APR-SEP	2264.0	1745.0	77	2105.0	93	1385.0	61
	APR-JUL	1891.0	1455.0	77	1760.0	93	1150.0	61
	APR-JUN	1442.0	1125.0	78	1355.0	94	895.0	62

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.
ROSS	1404.1	466.0	579.7	298.0
DIABLO RESERVOIR	90.6	85.0	85.7	---
GORGE RESERVOIR	9.8	8.2	7.8	---

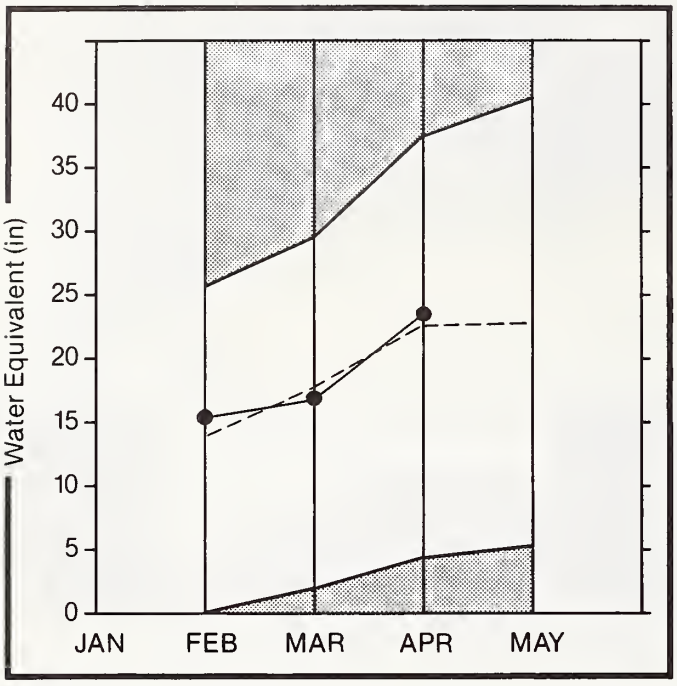
WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	THIS YEAR AS % OF AVERAGE
Skagit River	12	103	85
Baker River	0	0	0
Snoqualmie River	1	151	88
Skykomish River	2	112	107

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

OLYMPIC

Mountain snowpack* (inches)



*Based on selected stations

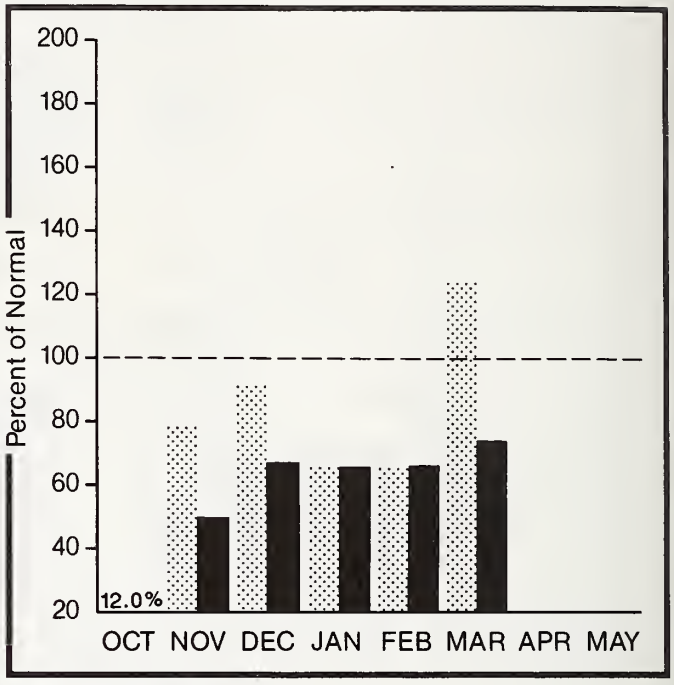
Maximum

Minimum

Average

Current

Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation

Year to date precipitation

OLYMPIC PENINSULA RIVER BASINS

WATER SUPPLY OUTLOOK:

April 1 forecasts of runoff for streams in the basin are for 85% of average on the Dungeness River and 83% on the Elwha River. Temperatures averaged two degrees above normal for March. The Olympic Basin remains the only area in the state with above average snow cover with the snow pack at 106%. Cox Valley snow course in the Morse Creek drainage had a 118 inch snow depth with 46.8 inches of water content for 117% of average. The water year to date precipitation is 73% of normal. March precipitation was 123% of average.

For more information contact your local Soil Conservation Service office.

OLYMPIC PENINSULA RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	25 YR. AVG. (1000AF)	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	REAS. MAX. (1000AF)	REAS. MAX. (% AVG.)	REAS. MIN. (1000AF)	REAS. MIN. (% AVG.)
DUNGENESS RIVER nr Sequim	APR-SEP	159.0	135.0	85	160.0	101	110.0	69
	APR-JUL	129.0	110.0	85	130.0	101	90.0	70
	APR-JUN	97.0	83.0	86	100.0	103	65.0	67
ELWHA RIVER nr Port Angeles	APR-SEP	553.0	460.0	83	550.0	99	370.0	67
	APR-JUL	454.0	375.0	83	450.0	99	300.0	66

RESERVOIR STORAGE (1000AF)

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	THIS YEAR AS % OF AVERAGE
Dungeness River	1	117	94
Morse Creek	1	130	117
Elwha River	1	143	99

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.
2 - Corrected for upstream diversions or changes in reservoir storage.
The average is computed for the 1961-85 base period.

DATA CURRENT AS OF: 4/ 6/88 12:15: 0

BASIN SUMMARY OF SNOW COURSE DATA
APRIL 1988

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-85
PENO OREILLE RIVER						
BENTON MEADOW	2370	3/31/88	0	.0	.0	4.2
BENTON SPRING	4920	3/31/88	39	13.2	13.6	19.4
BOYER MOUNTAIN	5250	3/29/88	57	18.9	20.4	26.6
BUNCHGRASS MEADOWS	5000	3/29/88	74	23.5	24.2	30.4
BUNCHGRASS MDWPILLOW	5000	4/01/88	---	22.5	24.9	27.2
CHEWALAH	4930	3/28/88	37	12.3	13.8	16.7
HEART LAKE TRAIL	4800	4/01/88	51	19.3	15.6	22.0
NOOOOO BASIN	6050	4/01/88	112	43.5	39.2	51.8
NOOOOO CREEK	5900	4/01/88	102	37.8	34.2	47.8
LOOKOUT	5140	3/30/88	74	25.0	25.0	35.1
NELSON CAN.	3100	3/28/88	37	12.3	10.9	15.5
SCHWEITZER BOWL	4800	3/30/88	61	22.7	23.0	30.5
SCHWEITZER RIDGE	6200	3/30/88	97	36.5	42.5	47.9
COLVILLE RIVER						
BAIRD	3220	3/28/88	17	5.0	3.5	5.6
CHEWALAH	4930	3/28/88	37	12.3	13.8	16.7
TOGO	3370	3/30/88	24	7.0	6.9	11.3
KETTLE RIVER						
BARNES CREEK CAN.	5300	3/30/88	59	18.6	12.6	20.6
BIG WHITE MTN CAN.	5510	3/26/88	52	15.9	15.2	19.4
BUTTE CREEK	4070	3/29/88	26	6.6	5.9	9.6
CARMI CAN.	4100	3/26/88	12	3.4	2.7	6.4
FARRON CAN.	4000	3/29/88	29	8.6	10.0	13.9
GOAT CREEK	3600	3/29/88	16	1.6	1.2	4.8
MONASHEE PASS CAN.	4500	3/30/88	41	12.1	8.1	14.0
SUMMIT G.S.	4600	3/29/88	23	6.1	5.2	8.4
TRAPPING CK LOW CAN.	3050	3/26/88	5	1.6	.3	3.5
TRAPPING CK UP CAN.	4460	3/26/88	23	6.9	5.3	9.8
OMAK LAKE, TWIN LAKES						
MOUNT TOLMAN	2000	4/04/88	0	.0	--	--
TWIN LAKES	2700	4/04/88	0	.0	--	--
SPOKANE RIVER						
ABOVE BURKE	4100	3/30/88	44	15.2	13.6	22.6
FOURTH OF JULY SUM	3200	3/30/88	5	1.7	.0	7.3
LOOKOUT	5140	3/30/88	74	25.0	25.0	35.1
LOST LAKE	6110	3/28/88	126	54.6	44.6	59.3
MOSQUITO RIDGE	5200	4/01/88	76	27.2	30.2	38.2
SHERWIN	3200	3/30/88	25	7.7	4.8	12.1
SUNSET	5540	4/01/88	65	22.0	21.4	33.5
NEWMAN LAKE						
OKANOGAN RIVER						
ABERDEEN LAKE CAN.	4300	3/31/88	12	3.3	2.0	6.1
BRENDA MINE CAN.	4800	3/31/88	30	8.8	10.9	13.0
BROOKMERE CAN.	3200	3/30/88	23	6.4	8.7	8.6
ENDERBY CAN.	6200	3/29/88	105	39.1	37.4	38.6
ESPERON CK. LO CAN.	4400	3/27/88	29	7.9	7.9	12.0
ESPERON CK. MID CAN.	4690	3/27/88	40	11.7	11.3	15.5
ESPERON CK. UP CAN.	5410	3/27/88	43	13.7	12.0	18.7
GREYBACK RES CAN.	5120	3/28/88	24	5.7	5.5	9.1
HAMILTON HILL CAN.	4890	3/29/88	39	10.8	11.2	15.1
HARTS PASS PILLOW	6500	4/01/88	---	31.2S	45.0	53.9
ISINTOK LAKE CAN.	5500	3/28/88	18	3.7	4.7	7.6
LOST HORSE MTN CAN.	6300	3/30/88	32	6.2	6.8	9.5
MCCULLOCH CAN.	4200	3/31/88	16	5.5	2.4	6.7
MISSEZULA MTN CAN.	5090	3/25/88	22	5.7	7.7	9.4
MISSION CREEK CAN.	5800	3/31/88	56	26.3	13.4	20.4
MONASHEE PASS CAN.	4500	3/30/88	41	12.1	8.1	14.0
MT. KOBAU CAN.	5900	3/27/88	37	11.1	9.8	12.9
MUTTON CREEK #1	5700	3/30/88	38	13.5	12.0	13.6
OYAMA LAKE CAN.	4400	3/25/88	16	4.3	3.3	7.0
POSTILL LAKE CAN.	4500	3/31/88	28	7.4	5.5	9.0
RUSTY CREEK	4000	3/30/88	6	2.1	3.7	6.4
SALMON MEADOWS	4500	3/30/88	22	7.4	8.5	10.0
SALMON MOWS PILLOW	4500	4/01/88	---	8.3S	8.5	13.9
SILVER STAR MTN CAN.	6000	3/27/88	66	24.2	24.5	29.2
SUMMERLAND RES CAN.	4200	3/28/88	20	5.4	6.2	9.5
SUNDAY SUMMIT CAN.	4300	3/29/88	13	3.0	3.9	4.7
TROUT CREEK CAN.	4690	3/27/88	20	5.0	5.6	7.2
VASEUX CREEK CAN.	4600	3/30/88	23	5.9	3.2	6.6
METHOW RIVER						
HARTS PASS PILLOW	6500	4/01/88	---	31.2S	45.0	53.9
MUTTON CREEK #1	5700	3/30/88	38	13.5	12.0	13.6
RUSTY CREEK	4000	3/30/88	6	2.1	3.7	6.4
SALMON MEADOWS	4500	3/30/88	22	7.4	8.5	10.0
SALMON MOWS PILLOW	4500	4/01/88	---	8.3S	8.5	13.9
CHELAN LAKE BASIN						
CLOUDY PASS AM	6500	3/30/88	101	37.9	39.4	42.5
LYMAN LAKE PILLOW	5900	4/01/88	---	60.7S	55.6	64.3
LITTLE MOWS AM	5280	3/30/88	130	48.8	37.3	44.2
MIRROR LAKE PILLOW	5600	4/01/88	---	36.1S	36.8	32.8
PARK CK RIDGE PILLOW	4600	4/01/88	---	55.1S	44.3	44.8
RAINY PASS PILLOW	4780	4/01/88	---	38.3E	32.6	46.3
ENTIAT RIVER						
POPE RIDGE	3540	3/28/88	46	17.0	14.6	17.1
WENATCHEE RIVER						
BERNE-MILL CREEK	3170	3/30/88	76	26.7	26.3	27.4
BLEWETT PASS #2	4270	3/30/88	30	9.9	10.2	15.6
BLEWETT PASS#2PILLOW	4270	4/01/88	---	16.4S	13.5	24.4
CHIWAUKUM G.S.	2500	3/30/88	17	4.7	6.6	9.4
LYMAN LAKE PILLOW	5900	4/01/88	---	60.7S	55.6	64.3
MERRITT	2140	3/30/88	20	7.2	10.5	13.7
MISSION RIDGE	5000	3/28/88	36	12.2	13.2	--
STEVENS PASS PILLOW	4070	4/01/88	---	49.6S	43.3	43.0
STEVENS PASS SNNO SO	3700	3/30/88	94	33.7	31.1	34.6

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-85
COLOCKUM CREEK						
SQUILCHUCK CREEK						
BEEHIVE SPRINGS	4400	3/28/88	5	1.0	4.2	7.5
STEMILT CREEK						
STEMILT SLIDE	5000	3/29/88	21	7.0	8.9	13.4
UPPER WHEELER	4400	3/29/88	2	.3	1.7	8.5
YAKIMA RIVER						
ANTANUM R.S.	3100	3/30/88	5	1.7	3.5	5.5
BIG BOULDER CREEK	3200	3/29/88	53	17.1	16.1	18.0
BLEWETT PASS #2	4270	3/30/88	30	9.9	10.2	15.6
BLEWETT PASS#2PILLOW	4270	4/01/88	---	16.4S	13.5	24.4
BUMPING LAKE	3450	3/30/88	25	9.0	10.7	14.7
BUMPING LAKE (NEW)	3400	3/30/88	34	12.3	14.5	18.8
CAYUSE PASS	5300	4/01/88	153	58.8	66.1	85.1
COLOCKUM PASS	5370	4/01/88	30	11.3	12.1	17.0
CORRAL PASS PILLOW	6000	4/01/88	---	36.8S	33.3	37.8
FISH LAKE	3370	3/28/88	78	27.5	26.1	32.1
FISH LAKE PILLOW	3370	4/01/88	---	33.7S	29.3	36.0
GREEN LAKE	6000	3/29/88	85	31.8	24.7	34.7
GREEN LAKE PILLOW	6000	4/01/88	---	22.0S	20.6	21.1
CROUSE CAMP	5380	3/31/88	37	13.5	16.0	17.6
OLALLIE MEADOWS	3960	3/31/88	97	39.9	26.5	45.5
SASSE RIDGE PILLOW	4200	4/01/88	---	31.7S	28.0	34.9
TUNNEL AVENUE	2450	3/28/88	36	13.0	17.3	21.7
WHITE PASS E.S.	4500	3/27/88	60	19.6	16.9	24.4
WHITE PASS ES PILLOW	4500	4/01/88	---	20.9S	17.4	25.3
ANTANUM CREEK						
ANTANUM R.S.	3100	3/30/88	5	1.7	3.5	5.5
GREEN LAKE PILLOW	6000	4/01/88	---	22.0S	20.6	21.1
MILL CREEK						
NIGH RIDGE PILLOW	4980	4/01/88	---	18.3S	19.5	29.7
TOUCHET #2 PILLOW	5530	4/01/88	---	32.1	28.6	--
LEWIS AND COWLITZ RIVERS						
CAYUSE PASS	5300	4/01/88	153	58.8	66.1	85.1
JUNE LAKE PILLOW	3200	4/01/88	---	29.2S	36.8	31.4
LONE PINE PILLOW	3800	4/01/88	---	24.6S	29.1	43.4
POTATO HILL PILLOW	4500	4/01/88	---	25.5S	20.8	30.7
SPENCER MDW PILLOW	3400	4/01/88	---	25.9S	29.1	29.9
SPIRIT LAKE PILLOW	3100	4/01/88	---	4.4S	.0	14.7
STRAWBERRY L. PILLOW	3280	4/01/88	---	53.2S	44.5	57.0
WHITE PASS E.S.	4500	3/27/88	60	19.6	16.9	24.4
WHITE PASS ES PILLOW	4500	4/01/88	---	20.9S	17.4	25.3
WHITE RIVER						
CAYUSE PASS	5300	4/01/88	153	58.8	66.1	85.1
CORRAL PASS	6000	3/31/88	101	35.3	34.5	40.9
CORRAL PASS PILLOW	6000	4/01/88	---	36.8S	33.3	37.8
GREEN RIVER						
COUGAR MTN. PILLOW	3200	4/01/88	---	20.6S	15.1	27.4
CEDAR RIVER						
CITY CABIN	2390	3/31/88	22	8.5	--	14.3
MT. GARDNER	3300	3/31/88	28	10.7	9.8	15.0
SNOQUALMIE RIVER						
OLALLIE MEADOWS	3960	3/31/88	97	39.9	26.5	45.5
KROMONA MINE	2600	3/31/88	79	29.8	--	--
OLNEY PASS	3250	3/31/88	57	21.6	--	--
SKYKOMISH RIVER						
STEVENS PASS PILLOW	4070	4/01/88	---	49.6S	43.3	43.0
STEVENS PASS SNNO SO	3700	3/30/88	94	33.7	31.1	34.6
SKAGIT RIVER						
BEAVER CREEK TRAIL	2200	3/29/88	21	9.0	8.8	12.2
BEAVER PASS	3680	3/30/88	81	28.2	26.6	30.4
BROWN TOP AM	6000	3/30/88	148	53.4	54.4	60.8
DEVILS PARK	5900	3/29/88	121	36.0	37.0	43.6
FREEZEOUT CK. TRAIL	3500	3/30/88	34	10.6	11.2	11.7
GRANITE CREEK	3500	3/30/88	61	18.0	12.2	17.8
HARTS PASS PILLOW	6500	4/01/88	---	31.2S	45.0	53.9
LYMAN LAKE PILLOW	5900	4/01/88	---	60.7S	55.6	64.3
MEADOWS CABIN	1900	3/30/88	11	3.3	.0	5.1
NEW NOZOMEEN LAKE	2800	3/30/88	33	10.3	7.8	11.0
RAINY PASS PILLOW	4780	4/01/88	---	38.3E	32.6	46.3
THUNDER BASIN	2400	3/30/88	71	22.4	21.4	22.0
BAKER RIVER						
DUNGENESS RIVER						
DEER PARK	5200	3/29/88	60	20.3	17.4	21.7
HORSE CREEK						
COX VALLEY	4500	3/31/88	118	46.8	36.0	40.0
ELWHA RIVER						
HURRICANE	4500	3/28/88	71	22.8	16.0	23.1

Range & Pasture Demand Extra Care When Water is Short

Roots transport moisture and nutrients to growing plants. When plants are overgrazed, root growth stops; when root growth stops, leaf growth stops too.

IRRIGATED PASTURE management practices which encourage root and leaf growth are the same practices which allow plants to make the best use of soil moisture. They include:

- Rotation grazing with adequate rest and regrowth periods
- Leaving 4-6 inches of top growth at the end of each grazing period
- Fertilizing properly
- Applying irrigation water in the right amount at the right time

RANGE AND DRY PASTURE forage production depends entirely on natural moisture. Overgrazing during a drought does more damage to perennial plants than during a season of normal moisture. It reduces plant vigor, stops root and leaf growth, reduces ground cover, and invites accelerated erosion. Once erosion begins, it tends to get worse each year, further reducing plant vigor and forage production. This process is difficult to reverse.

RATHER THAN RISK PERMANENT DAMAGE TO GRAZING RESOURCES:

- Reduce livestock numbers to balance with forage supply
- Cull herds more than normal
- Sell calves and lambs early
- Determine forage needs and buy needed supplements early
- Grow small grains or sorghums for hay or pasture (these need less water than conventional forage crops)
- Defer planting perennial pasture, hay, or range seedings until a year with more favorable water outlook
- Keep spring developments, stock tanks, float valves and pipelines in good working order so water is not wasted
- Use evaporation retardants on ponds and tanks
- Prepare for hauling stock water
- Give spring development high priority (even mediocre springs will be helpful)
- Check with local SCS and ASCS offices to learn if regular or emergency cost-share programs are available to help with spring development, water harvesting, storage tanks, or other water conservation practices
- Don't overgraze or otherwise disturb streambank vegetation (it will be needed to prevent erosion, reduce sediment, and provide food and cover for wildlife)
- Remember, if a pasture unit must be abused, well established seedings can tolerate overgrazing better than native range.

WILDLIFE will suffer during a drought as much or more than domestic livestock. The wildlife that shares your land is a valuable natural resource. To help wildlife:

- Include additional features at stock water developments which will allow small animals and birds safe access to water (these are usually not expensive and are easily installed)
- Fence ponds and springs and install collector pipes to deliver water to a tank or trough. This will save the water source from damage by livestock trampling, as well as allow access by small animals and birds to lush vegetation that grows close to wet areas.

The Following Organizations Cooperate With The Soil Conservation Service In Snow Survey Work

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
  Corps of Engineers
U.S. Department of Agriculture
  Forest Service
U.S. Department of Commerce
  NOAA, National Weather Service
U.S. Department of the Interior
  Bonneville Power Administration
  Bureau of Reclamation
  Geological Survey
  National Park Service
  Bureau of Indian Affairs

Local:

City of Tacoma
City of Seattle
Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company
Snohomish County P.U.D.
Colville Confederated Tribes

Private:

Okanogan Irrigation District
Wenatchee Heights Irrigation District
Newman Lake Homeowners Association

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ROOM 360, U.S. COURT HOUSE
SPOKANE, WASHINGTON 99201

THIRD-CLASS BULK RATE
POSTAGE AND FEES PAID
USDA - SCS
SPOKANE, WA
PERMIT NO G-267

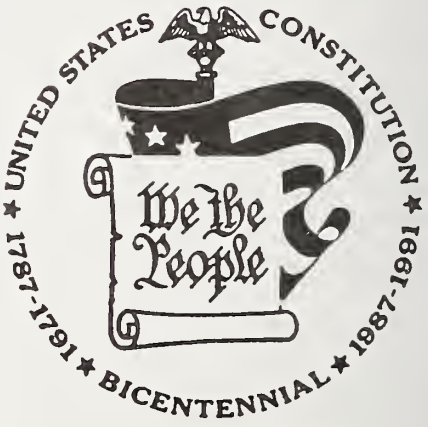
THIRD CLASS MAIL

Washington
Water Supply Outlook

and

Federal — State — Private
Cooperative Snow Surveys

SOIL CONSERVATION SERVICE



☆ GPO 1988 591-071